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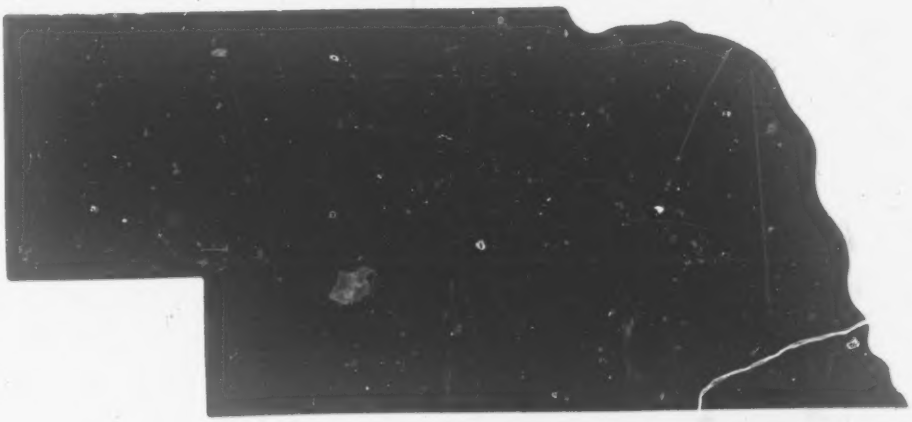
NASIS



NEBRASKA ANNUAL SOCIAL INDICATORS SURVEY

Bureau of Sociological Research
Department of Sociology
University of Nebraska–Lincoln
Lincoln, Nebraska 68588-0325
Telephone: (402) 472-3672

HASIS-82, #12

RISK FACTORS AND UTILIZATION OF PHYSICIAN AND HOSPITAL SERVICES

Richard L. Meile

and

Stephanie L. Shanks
Department of Sociology

Price: $ .75

The Nebraska Annual Social Indicators Survey

Helen A. Moore - 1982 Study Director

The findings in this report are based on data collected in the sixth Nebraska Annual Social Indicators Survey (NASIS). This survey is part of an on-going study of the quality of life in Nebraska conducted by the Bureau of Sociological Research at the University of Nebraska-Lincoln.

The sample for NASIS consists of 1907 respondents eighteen years of age or older residing in households in Nebraska. The sample is selected through a process called random digit dialing: within each three-digit prefix in the state, four-digit numbers are selected randomly from all possible four-digit numbers to complete the telephone number. Respondents are further chosen randomly from the adults in the household and interviewed by telephone by experienced, professional interviewers from the offices of the Bureau of Sociological Research. All interviewing was done between February and April of 1982. This procedure produces a high-quality, representative sample of Nebraska adults. Analysis shows the sample to be representative of the state on age, sex, race, and geographical distribution.

The interview averaged approximately 47 minutes and included questions about energy use, health, recreation, political attitudes, occupation, education, family life, and other matters reflecting the quality of life experienced in the state. For the entire sample, the chances are 95 in 100 that the true value for the population lies within a range equal to the reported survey percentage plus or minus 2.24 percent. This is an estimate of maximum error and for most items the percentages are likely to be even more accurate.

The data gathered by NASIS are used by a wide variety of State and local government agencies for policy and program planning and by faculty and students at the University of Nebraska and other colleges for research. No information identifying any respondent is released to any user and the strict confidentiality of individual respondents is rigidly enforced. While the final responsibility for the organization and structure of the survey and for reports produced under its name rests with the Bureau of Sociological Research, public agencies and University departments play an integral part in planning the survey through an Advisory Committee. Public organizations interested in membership on the Advisory Committee should contact the NASIS Study Director.

Funding for NASIS comes from the University of Nebraska, the Bureau of Sociological Research and State and local agencies which buy items and data analysis from the survey.

The NASIS surveys are repeated each year to measure changes in the quality of life in Nebraska. While there is a core of questions which is included every year, each survey has a large component of unique items which address specific topical issues. Plans for future years include reinterviewing the 1977 panel every two years to assess changes in their lives. Additional detail on the NASIS surveys regarding use of the survey data or cost of purchasing items on future surveys can be obtained by contacting the NASIS Study Director at the Bureau of Sociological Research or by sending for a copy of the 1983 NASIS Prospectus.

Introduction

Utilization of health care resources increasingly is the focus of study because of rising health costs as well as concern with population levels of health. Health care utilization is affected by a number of factors: social characteristics of the potential user (e.g., place of residence, occupation, education, and gender); psychological-emotional status, and presence or absence in the individual of risk factors such as smoking of cigarettes or being overweight (c.f., Andersen and Aday, 1978; Tessler, Mechanic and Diamond, 1976). In this NASIS study, we report findings of a survey of 1907 adult Nebraskans who, in the Spring of 1982, reported physician and hospital utilization, information concerning five risk factors, their health status, and information about their occupation, education, and numerous other social background characteristics. In a previous NASIS-82 report, we outlined differences in personal health risks by social background characteristics. Our purpose in this study is to relate respondents' background to the utilization of physician and hospital services for the year mid 1981-82. In addition, personal health risk factors and a measure of potential psychological-emotional distress are examined for their relationship to using doctor and/or hospital services. Multiple classification techniques are applied to analyses of the data in order to enable us to separate out the statistical significance of each factor independent of the others used in the study. This statistical procedure is used because the crosstabulation of utilization with demographic and personal risk characteristics will not establish

which variable(s) is the source of significant differences among groups in utilization of health resources.

A detailed discussion of the sample design, wording of the research questions, the telephone interview procedures and other matters related to the methodology are reported in Designs, Procedures, Instruments and Forms for the 1982 NASIS (Moore, 1982).

Social Background

National research as well as regional studies of the country (c.f., Andersen, Kravits, and Anderson, 1975; Andersen and Aday, 1978; McKinlay, 1972) have consistently reported effects of gender, place of residence (rural-urban), age, marital status and socio-economic status upon utilization of health resources. Attitudes and beliefs which affect use are known to be related to social background as well as health status, which, in turn, relates to the seeking of medical services. In our study we first examine the relationship of social background, and then health risk, to utilization. Finally, we "combine" the two factors to distinguish the implications of both for doctor and hospital visits.

The crosstabulation of health care utilization by socio-demographic characteristics in Table 1 displays some patterned relationships. Of the 1323 (69.5%) respondents who have sought physician care, almost 57% were female (56.8%). Nebraska is not exceptional in this regard for a similar pattern is found even in national studies (c.f., Andersen and Anderson, 1979). When the number of doctor visits is examined by sex, males tend to seek fewer visits per year than females. For example, of the males who

sought physician care, 37.1% went to the doctor once while 20.6% had 6 or more visits. In comparison, only 28.4% of the females limited physician care to one visit annually and 28.9% went to the doctor 6 or more times. Since females utilize physician care more frequently than males, it is not surprising to find a similar pattern for hospital admittances (e.g., 13% of males and 18.2% of females in the sample were admitted to the hospital). When males were admitted to the hospital, they had a greater tendency to be readmitted that year than females. This sex difference in rates could reflect the female use of hospital services for childbirth rather than admittance for chronic ailments.

The relationship between age and health care utilization is more subtle. Not surprisingly, the vast majority of people at all age groups had seen a doctor that year ranging from 73.3% of people 18-30 to 77.2% of 65-94 year olds with a slight downward variation for other age categories. Across all age groups, the majority saw a doctor 1-3 times that year. Persons below age 55 tend to seek a physician 1-3 times more often (per year) than those in other age groups; however, they seek a physician 6 or more times annually less frequently. For example, nearly 68% of persons 18-30 saw a physician 1-3 times and only 23.4% of that age category went to a doctor 6 or more times annually. By contrast, 53.8% of persons age 65-94 saw a physician 1-3 times, while approximately 33% had 6 or more visits per year. Hospital admittance follows a similar pattern with the youngest and oldest age groups having the highest rates (16.3% of those 18-30 and 23.3% of people 65-94 being admitted to the hospital during the last year).

Contrary to what one might expect, place of residence does not appear to have a marked effect upon health care resources utilization. In general, city and town dwellers saw a physician slightly more often than did rural residents. Hospital use did not differ considerably by residence; 13.4% of farm or ranch dwellers and 16.9% of rural non-farm residents were admitted to a hospital during mid 1981-82. Town and city residents were much more likely, however, to be hospitalized more frequently than rural inhabitants.

The trends in utilization by marital status are relatively well defined. The greatest use of physician services is by persons married but living apart from their spouse (81.8%). Widowed and divorced have the greatest number of doctor visits per year, separated persons the least. Married are the most frequently hospitalized (perhaps reflecting childbirth) while the widowed or divorced have the highest percent hospitalized of any of the marital status groupings.

Socioeconomic status is the last social indicator examined in relation to health care utilization. The utilization of physician services appears to be an equally common phenomenon by the socioeconomic status of respondents (approximately 69% of the total sample visited a doctor at least once regardless of economic position). When the number of doctor visits per year is considered, a majority of each status group tended to go to a doctor 1-3 times (about 66% of the total sample with slight variation by category). While there is little variation in the number of doctor visits by socioeconomic status, a pattern, although slight, of hospital admittance is more clearly defined. Low status

respondents had the highest incidence of admittance (19.2%) while only 13.5% of the middle and 14% of high status persons were admitted to a hospital in 1982. However, the high status persons tended to be admitted more than once. Both the low and middle status persons had a greater tendency to be admitted only once which might reflect greater incidence of acute illness or an inability to afford further hospitalization shifting to out-patient care. Since the reason for such a pattern cannot be determined by this analysis, one must view the overall patterns of health care utilization by social status in a positive light with some form of services accessible to a majority in each status group.

Rural-urban residence, gender, age, marital status and socio-economic status combined together were related to the following measures of utilization: a) having seen a physician in the last year; b) number of times saw a physician in the last year; c) admitted to a hospital during the last year; and d) number of hospital admissions (see Tables 2 and 3). Even though the "block" of background variables was related to all of the utilization measures (physician and hospital visits), the individual background factors varied in their degree of relationship. For example, age groups do not differ greatly in their visiting a physician during the last year, nor do socio-economic groups differ. Both of these groups, however, do differ in the number of physician visits, with older persons and those with more education and higher occupational statuses visiting the physician more often, on the average, than the entire sample which reported 2.76 doctor visits per year. On the other hand, place of residence,

gender, and marital status differences were not related to the number of physician visits.

Factors related to hospitalization differ somewhat from those related to physician visits. While the five background factors taken together effected respondent hospitalization during the last year (approximately 16% of the entire sample) only gender, age, and socio-economic status show much variation among groups. Males exceeded females in hospitalization rates and higher socio-economic statuses exceeded the lower "SES" group.

Our "predictions" of health care resources utilization are enhanced when we know about the gender, age, place of residence, marital status, and socio-economic status of the respondent. Taken together these factors are related to utilization of both physician and hospital services. Several factors, as noted above, have a specific relationship to one measure of use or another, independent of the other background variables. Note should be made that we have looked at the relationship of background to utilization, independent of the implication of risk factors.

Risk Factors

Five measures of risk: psychological-emotional status, high blood pressure, overweight, limiting fat or cholesterol, and cigarette smoking were related to physician and hospital use (see Table 4). In examining the relationship of risk to utilization, we statistically hold constant the effects of social background so that we may understand the importance of risk factors for use, independent of social background.

The five risk factors combined are statistically related to having visited a physician ($p<.05$), unrelated to number of

physician visits, and related to hospitalization and number of times hospitalized during the last year. The psychological-emotional factor, high blood pressure, and limiting food intake because of high fat-cholesterol are related to seeking a physician, however, only being psychologically at risk is statistically related to f quency of doctor visits. Those psychologically at risk averaged nearly 3 doctor visits per year whle thos not at risk averaged approximately 1/4 less visits per year. One-quarter less visits multiplied by hundreds of thousands of persons adds up to many less visits annually for the population as a whole. High blood pressure and having to restrict fat-cholesterol levels are two risks which independently are related to number of times hospitalized. Surprisingly, these two factors reduce average number of times hospitalized. That is, those persons who have been told that they have high blood pressure averaged 1.83 times hospitalized annually, while those who had no indication of high blood pressure averaged 1.90 times hospitalized. Those persons who stated that they "almost always" limited their fat-cholesterol intake averaged 1.86 times hospitalized.

At risk factors, statistically independent of social background, are related to utilization of physician and hospital facilities and frequency of use. Being psychologically at risk increases frequency of hospitalization and number of doctor visits. Cigarette smoking, per se, apparently has no direct implications for utilization of either physician or hospital resources.

Joint Effects of Risk Factors

To date, we have looked at the effects of the five risk factors as a "block" and at the separate effects of each risk independent of the other. In this section of the report, the combined relationship of two, three, or four risk factors to health resources utilization is reviewed.

Being overweight and smoking cigarettes are jointly related statistically (P = .025) to having seen a physician during the last year, while high blood pressure and overweight have a combined relationship to number of doctor visits per year (P = .038). These two variables combined with restricting intake of fat-cholesterol and smoking increase the number of doctor visits annually above the sample average (P = .021).

Several of the risk variables interact together in their relationship to hospitalization and frequency of admission. Overweight, smoking and need to control fat-cholesterol are jointly related to likelihood of being hospitalized. High blood pressure, overweight, fat-cholesterol and concern over having a nervous breakdown together are related to hospitalization, while the 3 factors of overweight, concern about ingestion of fat-cholesterol and smoking cigarettes combine to be statistically related to frequency of hospitalization.

Social background and risk factors independently effect use of physician and hospital resources. Some combinations of risks are especially related to use. Although the relationships are statistically significant, that is exceed chance association, one cannot predict very accurately utilization from a knowledge of background and/or risk. One reason for this is that utilization

is affected by health status, availability of resources and past patterns of use. Information of this type can only be obtained by interviewing the same persons at two or more points in time in order to note the changes which take place through time.

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Table 1.

The Utilization of Health Care Services by Number and Percent

Demographics	Seen Doctor	Number of Doctor Visits				Hospital Admittance	Number of Times Admitted	
		1	2-3	4-5	6+		1	2+
Sex								
Male	62.6	37.1	32.3	10.0	20.6	13.0	37.4	62.6
	(572)	(211)	(184)	(57)	(117)	(119)	(88)	(147)
Female	75.7	28.4	34.4	8.3	28.9	18.2	48.7	51.3
	(751)	(212)	(257)	(62)	(215)	(180)	(147)	(33)
Total	69.5	32.2	33.3	9.0	25.3	15.7	38.4	21.6
	(1323)	(423)	(440)	(119)	(332)	(299)	(235)	(65)
Age								
18 - 30	73.3	35.5	32.1	9.0	23.4	16.3	36.2	21.2
	(439)	(155)	(140)	(39)	(102)	(98)	(84)	(14)
31 - 40	65.0	37.1	37.3	7.4	18.3	13.4	14.4	20.0
	(227)	(84)	(84)	(17)	(41)	(47)	(34)	(13)
41 - 55	65.5	36.7	31.1	8.0	24.1	12.2	20.0	10.7
	(286)	(104)	(88)	(23)	(68)	(53)	(47)	(7)
56 - 64	63.6	22.8	38.4	7.9	30.9	14.3	10.9	10.4
	(143)	(33)	(55)	(11)	(44)	(32)	(25)	(7)
65 - 94	77.2	21.3	32.5	13.1	33.1	23.3	18.5	37.7
	(224)	(47)	(72)	(29)	(73)	(67)	(43)	(24)
Total	69.4	32.2	33.6	9.1	25.1	15.7	78.3	21.7
	(1320)	(423)	(440)	(119)	(329)	(298)	(233)	(65)
Place of Residence								
Farm or Ranch	63.3	29.2	39.2	4.8	26.8	13.4	14.8	6.3
	(184)	(53)	(72)	(9)	(49)	(39)	(35)	(4)
Rural Non-Farm	64.5	39.9	34.9	9.7	15.5	16.9	7.3	7.8
	(84)	(33)	(29)	(8)	(13)	(22)	(17)	(5)
Town or City	71.1	32.0	32.5	9.7	25.8	16.1	77.9	85.8
	(1054)	(335)	(340)	(101)	(270)	(238)	(183)	(55)
Total	69.4	32.1	33.6	9.0	25.3	15.7	78.4	21.6
	(1322)	(422)	(440)	(118)	(332)	(299)	(235)	(65)
Marital Status								
Married	67.7	32.0	33.7	8.2	26.1	14.8	66.2	66.4
	(907)	(289)	(303)	(74)	(235)	(198)	(155)	(43)
Widowed	77.1	19.0	35.4	9.2	36.4	24.2	8.4	12.4
	(88)	(16)	(31)	(8)	(31)	(28)	(20)	(8)
Divorced	74.1	32.5	26.8	8.7	21.9	25.0	7.5	10.3
	(72)	(23)	(19)	(6)	(23)	(24)	(18)	(7)
Separated	75.6	36.4	27.3	10.7	25.6	7.5	.2	.7
	(10)	(4)	(3)	(1)	(2)	(1)	(0)	(0)
Never Married	72.2	36.9	34.5	12.0	16.6	14.3	17.5	10.2
	(241)	(89)	(83)	(29)	(40)	(48)	(41)	(7)
Married, Living Apart	81.8	44.4	33.3	11.1	11.1	9.1	.2	0.0
	(4)	(2)	(1)	(0)	(0)	(0)	(0)	(0)
Total	69.5	32.2	33.5	9.0	25.3	15.7	78.4	21.6
	(1323)	(423)	(440)	(118)	(332)	(299)	(235)	(65)

Table 1.

The Utilization of Health Care Services by Number and Percent
(continued)

Demographics	Seen Doctor	Number of Doctor Visits				Hospital Admittance		Number of Times Admitted
		1	2-3	4-5	6+			2+
Social Status								
Low	68.3	33.9	29.4	7.3	29.4	19.2	43.1	32.7
	(403)	(135)	(117)	(29)	(116)	(113)	(94)	(19)
Middle	69.6	32.5	32.7	10.7	24.0	13.5	44.7	12.2
	(636)	(206)	(207)	(68)	(152)	(124)	(97)	(27)
High	68.6	32.4	40.9	9.2	17.5	14.0	12.2	22.8
	(196)	(64)	(80)	(18)	(34)	(40)	(27)	(14)
Total	69.0	33.0	33.0	9.4	24.7	15.5	78.6	21.4
	(1235)	(404)	(404)	(115)	(303)	(277)	(218)	(59)

Table 2.

The Utilization of Health Services by Risk Factors

Utilization	Risk Factors: Nervous Breakdown	High Blood Pressure	Overweight	Cigarettes
Seen Doctor	219 (78.6)	396 (82.7)	642 (71.5)	363 (67.0)
Number of Doctor Visits				
1	44 (20.6)	85 (21.9)	177 (27.7)	140 (38.6)
2 - 3	69 (32.3)	130 (33.3)	220 (34.3)	100 (38.6)
4 - 5	21 (9.8)	44 (11.3)	65 (10.1)	30 (8.2)
6+	80 (37.3)	131 (33.6)	179 (27.9)	93 (25.6)
Total	215	389	640	363
Hospital Admittance	58 (21.0)	107 (22.3)	143 (15.9)	90 (16.6)
Number of Times Admitted				
1	39 (66.7)	83 (77.9)	119 (83.1)	69 (76.9)
2+	19 (33.3)	24 (22.1)	24 (16.9)	21 (23.1)
Total	58	107	143	90
N	278	479	898	542

Table 3.

The Utilization of Health Care Services by the Limitation of Fat-Cholesterol

Utilization	Limitation of Fat-Cholesterol			
	Almost Always	Sometimes	Rarely	Never
Seen Doctor	465 (79.0)	407 (68.1)	170 (63.6)	274 (61.8)
Number of Doctor Visits				
1	132 (28.6)	129 (32.2)	63 (37.3)	97 (35.6)
2 - 3	155 (33.3)	145 (36.2)	55 (32.8)	83 (30.5)
4 - 5	44 (9.5)	37 (9.1)	17 (9.9)	21 (7.6)
6+	132 (28.6)	90 (22.4)	34 (20.0)	72 (26.3)
Total	464	401	169	273
Hospital Admittance	115 (19.5)	78 (13.1)	27 (10.1)	75 (16.9)
Number of Times Admitted				
1	92 (80.2)	65 (82.4)	19 (72.1)	54 (72.6)
2+	23 (19.8)	14 (17.6)	8 (27.9)	21 (27.4)
Total	115	78	27	75
N	589	597	268	445

Table 4.

Multiple Classification Analysis: Effects of Risk Factors on Utilization of Health Services Controlling for Social Background Characteristics.[1]

	Nervous Breakdown		Blood Pressure		Overweight		Fat-Cholesterol		Cigarettes		
	eta	Sig.	eta	Sig.	eta	Sig.	eta	Sig.	eta	Sig.	R^2
Seen Doctor[2]	.08	.037	.16	.000	.04	.668	.15	.000	.04	.150	.068
Number of Doctor Visits[3]	.05	.015	.01	.546	.02	.401	.06	.089	.00	.807	.025
Hospital Admittance[4]	.06	.085	.09	.002	.00	.797	.09	.029	.03	.490	.028
Number of Hospital Admittances[5]	.03	.798	.09	.001	.03	.418	.07	.032	.02	.657	.027

[1]Social background includes residence, sex, age, marital and social status.

[2]Significant relationships existed between having seen a doctor and place of residence (.008), sex (.001) and marital status (.005).

[3]The number of doctor visits was significantly related to age (.001) and social status (.012).

[4]Hospital admittance was significantly related to sex (.010), age (.012), and social status (.003).

[5]The number of admittances to the hospital was significantly related to sex (.003) and social status (.001).

List of reports already released using data gathered in the 1982 Nebraska Annual Social Indicators Survey. These may be purchased at the indicated price from the Bureau of Sociological Research at the University of Nebraska-Lincoln.

Report Number	Title
1	Designs, Procedures, Instruments and Forms for the 1982 NASIS. Helen A. Moore. Price: $7.50.
2	Attitudes Toward Social Security. Warren Luckner. Price: $1.25.
3	Community Colleges and Higher Education. Helen A. Moore. Price: $1.00.
4	The Status of Older Nebraskans. Jane C. Ollenburger and the Bureau of Sociological Research. Price: $1.50.
5	Social Responses to Scarcity. Alan Booth. Price: $1.00.
6	A Look At Nebraskans' Favorite Outdoor Recreational Activities. David R. Johnson and Laurie K. Scheuble. Price: $ .75.
7	Social Security and Government Spending: The Elderly Speak Out. Jane C. Ollenburger and the Bureau of Sociological Research. Price: $ .75.
8	Support for Programs Related to Alcohol Problems. Helen A. Moore. Price: $ .75.
9	Nebraskans and Health Risks: Social Indicators of Health Status. Stephanie L. Shanks and Richard L. Meile. Price: $ .75.
10	Nebraskans' Views on Public Welfare Issues. Carol Moats Tomer and Mary Olsen, Nebraska Department of Public Welfare. Price: $ .75.
11	The New Religious Right: An Examination of the Value Dislocation Hypothesis. Helen A. Moore and Hugh P. Whitt. Price: $1.00.
12	Risk Factors and Utilization of Physician and Hospital Services. Richard L. Meile and Stephanie L. Shanks. Price: $.75.